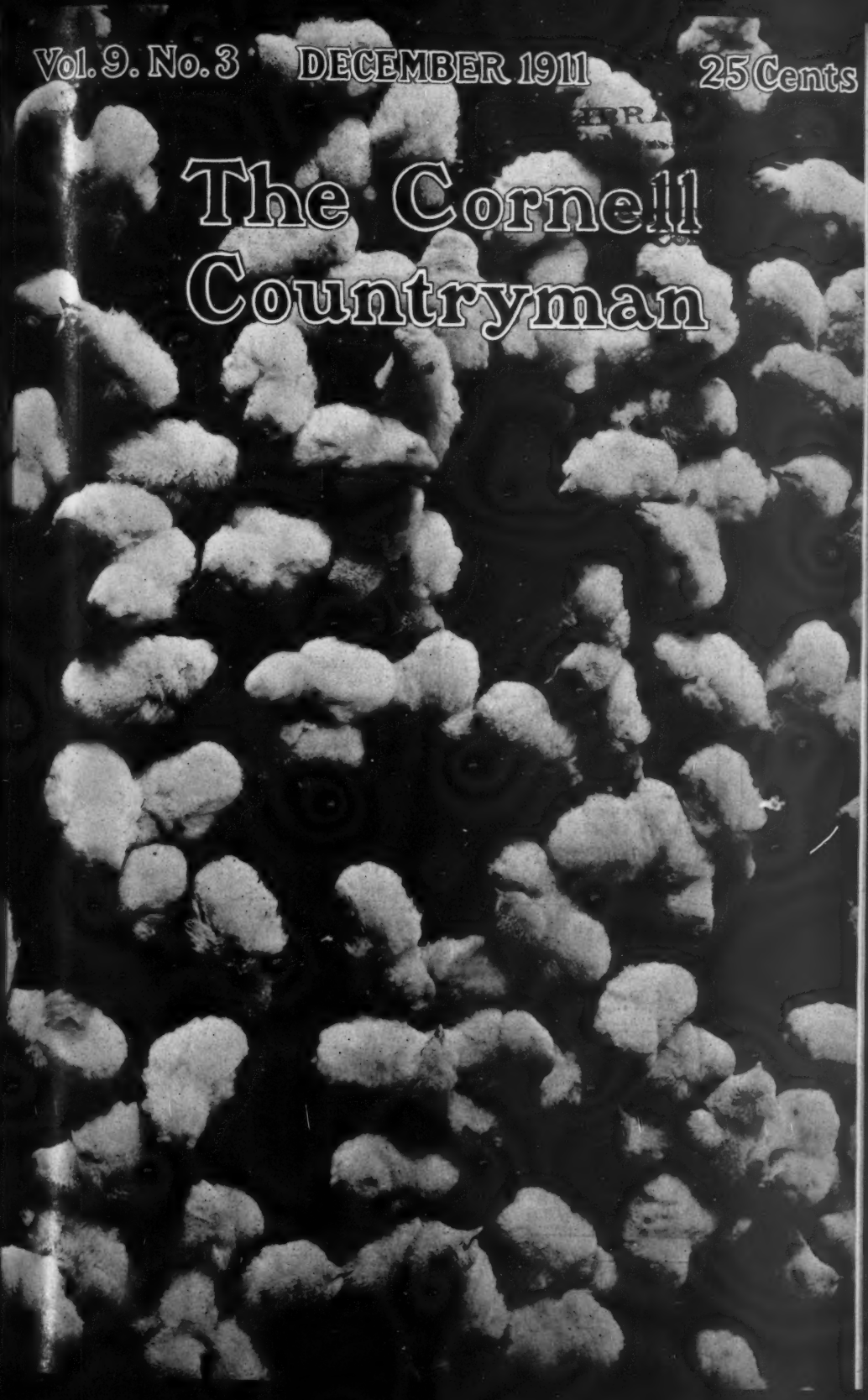
Vol. 9. No. 3 DECEMBER 1911 25 Cents

The Cornell Countryman



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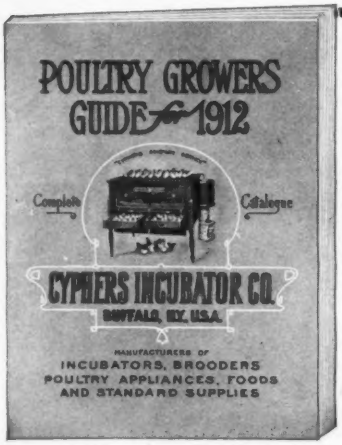

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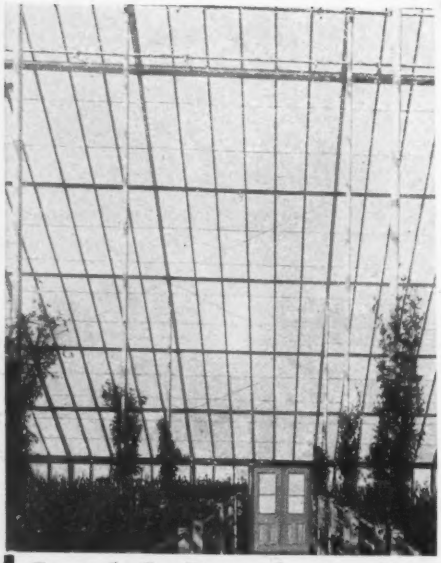

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NOW IN THE PROCESS OF ERECTION.

(See article on page 66)

The Cornell Countryman

Vol. 9 DECEMBER, 1911 No. 3

FOREWORD

By James E. Rice

Professor of Poultry Husbandry, Cornell University

POULTRY Husbandry is old as an art but new as a science. Man has kept hens since the history of animal domestication began. His methods were by rule based upon tradition, rather than upon principles founded upon scientific investigation. In other words, until recently, man has kept poultry on the "cut and try" plan. Now certain basic laws governing animal nutrition, inheritance and behavior are understood and applied. As a result of this coupling of the "how," the art, with the "why," the science, Poultry Husbandry is gradually advancing out of a minor agricultural industry into one of large commercial importance. Where formerly a few "barn yard" fowl *existed* now many large flocks, containing many thousands of fowls, ducks, etc., are *managed* successfully.

These changes have been brought about through increased knowledge, as a result of the application of science to every day practice. The sciences of chemistry, anatomy, physiology, pathology, embryology, physics, climatology, etc., have all contributed their share to our knowledge of how to feed, house, breed, hatch, brood, care for and market poultry. By the aid of science we have been able to overcome, in a measure, the natural limitations of Poultry Husbandry; that is to say, the short life and small size of the individual poultry unit, which limitations found expression in the difficulty experienced in rearing and handling poultry in sufficient numbers to make it worth while commercially. While we have made great advances, much yet remains to be done.

What the development of the domestic fowl is to be will depend upon two great controlling factors, her environment and her keeper. The former includes the soil, food and climate, and the latter, man's intelligence, enterprise and education. These two factors are interdependent, each reacts upon the other and both react upon the fowl. The hen is largely what the environment and man make her. Creation has only begun.

In the domestic fowl we have a good foundation upon which to build. Our environmental conditions are unexcelled. Hence, what the domestic fowl of the future is to be will rest with man. A large responsibility lies with each of us to do our part in improvement. This is our reasonable obligation.

Poultry Husbandry has much to contribute to human welfare. It supplies important food products for the sustenance and satisfaction of the race. It assists materially in maintaining soil fertility. It furnishes profitable employment and provides out-of-door occupation for millions of people. In all these respects Poultry Husbandry is doing its share toward furnishing a livelihood by which families survive, children are educated, the government is supported and civilization is advanced. Thus is Poultry Husbandry one of many worthy occupations by which man is enabled t o d o his work in the world.

THE NEW POULTRY HUSBANDRY BUILDING

By James E. Rice

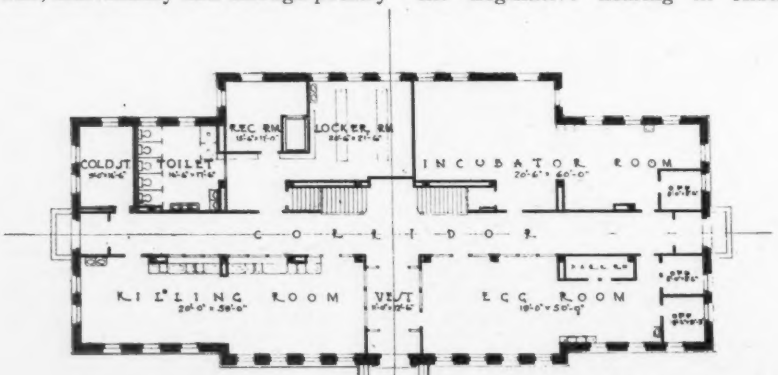
Professor of Poultry Husbandry at Cornell University

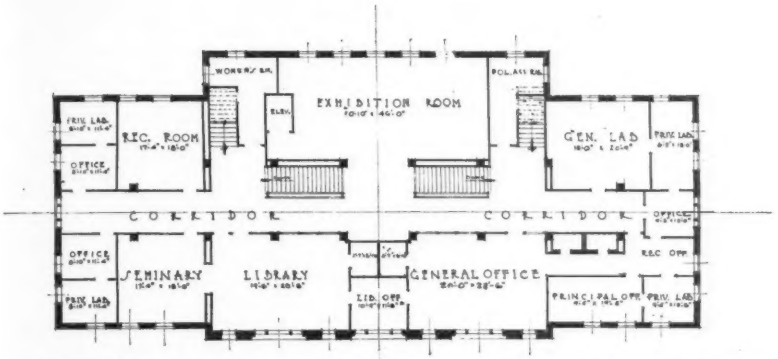
THE Poultry Husbandry Building, now in process of construction at Cornell, is the result of a special appropriation of $90,000 made by the New York State Legislature of 1909–10.

Ninety thousand dollars is by far the largest single appropriation ever made for educational purposes in Poultry Husbandry. It has set the pace and established a precedent which will enable other educational institutions to secure similar or larger appropriations in the near future. In thus showing its faith in Poultry Husbandry, by recognizing it as a subject to be taught and investigated on the same plane as other departments in an Agricultural College, New York State has placed herself in the front rank in the matter of developing her poultry interests. The action of the Legislature reflects credit upon the progressiveness of the people of the Empire State in thus taking advance ground in the support of the poultry department of the College.

The appropriation for the poultry building was made possible by a fortunate combination of factors. These factors were, first, the people of the state, from country and city alike, who, individually and through poultry associations, granges and other organizations, and the press gave their hearty support. This was particularly true of the officers and members of the New York State Branch of the American Poultry Association. The Secretary-Treasurer and later the President of the organization, Dr. E. M Santee, introduced a resolution at the annual meeting held at Ithaca, Farmers' Week, 1909, recommending to the Director of the College, to the President and to the Board of Trustees that the Legislature be asked to make an appropriation of $50,000 for a poultry building. The Poultry Department was requested to prepare plans for a building which would meet its needs. This was done and it was found that it would cost approximately $90,000, not including equipments and several auxiliary buildings. The authorities at Cornell accepted the estimate and united in asking the Legislature for the sum required.

It will be impossible to mention, in this short article, the names or to discuss the part that each of the large number of persons took in support of the bill. However, a group picture of the eight poultrymen who appeared at the Legislative hearing in Albany





especially to speak in favor of the appropriation for the Poultry Husbandry building is here shown. They represented associations and interests in widely separated parts of the state. Dr. E. M. Santee as President and Dr. Stanley Merkley as Secretary-Treasurer gave efficient leadership for the poultrymen of the state.

The responsibility and the credit for the appropriation should be shared by the farmers, those in authority at Cornell, the members of the Legislature and the Governor of the State, Governor Hughes. Without the sympathetic interest and hearty coöperation of *all* these the appropriation undoubtedly would not have been made.

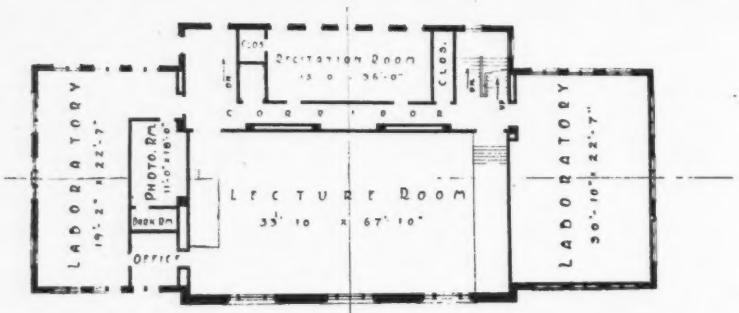
It should be said that fundamental to the securing of the appropriation was the pride of the people in their State College of Agriculture and their faith in Director Bailey. The new home of the Poultry Department, therefore, is due, in large measure, to the good work of the College as a whole which has won the confidence of the people and secured their hearty coöperation in the cause of agricultural education.

The plans of the building here shown were prepared by the Department of Architecture and the Department of Poultry Husbandry at Cornell, and with Green & Wicks, supervising architects, Buffalo, N. Y. Because this building was the first of its size to be designed, it was necessary to blaze out practically a new trail in the planning of poultry husbandry buildings.

The building was planned to meet the requirements of the four principal activities of the Department; namely, (1) administration, (2) teaching, (3) investigation and (4) extension.

This required provision to be made for handling large classes of two or three hundred students or more in lecture courses and proportionately large sections in laboratory work and in the practice (handicraft) courses; to handle the administrative affairs of managing a large producing plant and the storage and sale of products; to provide facilities for experiment and research work in the field, pen and laboratory and to prepare for use, throughout the state, in extension activities, the most useful information available in concrete and teachable form.

The building is now in the process of construction southeast of the Carnegie Filtration Plant on the second plateau of the Roberts pasture. The foundations are complete much of the iron work is in place and the outside walls are assuming shape. It faces the south, overlooking the eastern portion of the athletic field.



THIRD FLOOR PLAN
POULTRY HUSBANDRY BLDG.
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SCALE 1/8" = 1'-0"

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The structure is rectangular in shape, 132 feet long and 48 feet wide in the central portion, and 37 feet wide at the east and west ends. It contains a basement, three stories and an attic. It is planned eventually that there will be loggias extending from each end of the main building, and leading to a judging pavilion to the westward and to an incubator building and brooder houses to the eastward. These buildings will be one and one-half stories high without basements and will extend north and south, the front end on the same line as the front of the main building.

The first story of the main building and the extensions will be approximately on the same level as the main Agricultural College group. This location required a large amount of excavation. The soil thus removed is being used in making a plateau to the north of the Poultry Husbandry Building and the proposed annexes. On this plateau will be erected the auxiliary buildings consisting of laying and fattening houses, feed house, brooder houses, breed observation house, detention ward, and infirmary. These buildings will be used exclusively for teaching purposes including student research and experiment.

The chickens will be reared; the breed testing project will be carried on and the regular investigational work will be conducted on the fifty acre poultry farm north of Forest Home, about three-quarters of a mile from the teaching plant.

The entrances to the building are all approximately on the ground level. They are at each end and the front and back of the first floor. The main entrance is on the south side in the center of the building. A large vestibule opens into a main corridor which extends through the entire building, east and west. At the juncture of the corridor and the vestibule is a rotunda which provides a landing for the two stairways leading to the second floor.

The building was designed with the object in view of segregating, as much as possible, the practice work from the lecture and laboratory types of instruction and to keep these from interfering with the administrative and investigative activities. Hence the first floor and basement are given over entirely to the practice courses, locker rooms, lavatories, receiving room, storage, carpenter shop, laundry, killing room, egg handling and testing rooms and to the commercial phases of administration. This arrangement makes it possible for the students to enter the building on the ground level and pass freely through the building in four directions, to and from the auxiliary buildings, lockers and lavatories

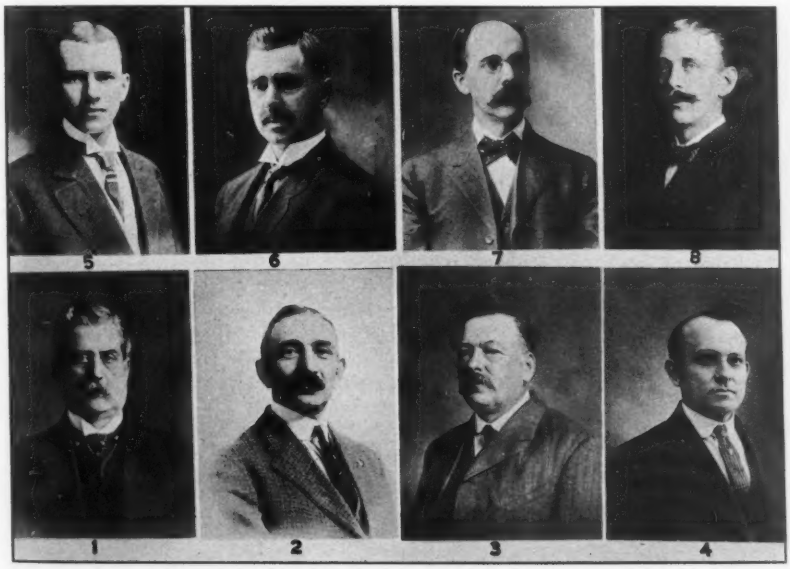
without going up or down stairs and therefore without interfering with the activities on the upper floors.

The second floor is reached from the first floor by two stairways in the center of the building. On this floor are a general office and five private offices, each of which, with one exception, is provided with a private laboratory. Here also is a general research laboratory, a library, an exhibition room, a seminar room and a small recitation room for special courses. On either side of the rotunda are a woman's rest room and headquarters for the Cornell University Poultry Association.

The third floor is reached from the main hallway in the center of the building by two staircases. This floor contains a large lecture room having a seating capacity for nearly three hundred persons. Two large laboratories, a photographic room and a recitation room with movable seats occupies the remainder of the floor. The recitation room serves also as a meeting place for the Poultry Association and the Winter Poultry Course Club.

An elevator shaft extends from the bottom to the top of the building near the north side, opening in the basement in the receiving room and on each of the floors where stock and appliances can be removed most conveniently to the lecture rooms, the laboratories and the exhibition room.

The main building, the extension and the auxiliary buildings, when completed as planned, will provide accommodations for teaching at one time one hundred or more winter course students and nearly three hundred regular and special students in the elementary lecture, laboratory and practice courses.



THE MEN WHO REPRESENTED THE POULTRYMEN OF THE STATE AT THE HEARING TO CONSIDER THE APPROPRIATIONS FOR THE AGRICULTURAL COLLEGE BEFORE THE "WAYS AND MEANS" AND "FINANCE" COMMITTEES OF THE LEGISLATURE OF 1910.

1—S. L. Cole, Oneonta, N. Y.
2—John D. Jaquins, Watervliet, N. Y.
3—John Jeannin, West Sand Lake, N. Y.
4—Dr. Stanley Merkley, Buffalo, N. Y.
5—Jacob P. Miller, Syracuse, N. Y.
6—Dr. E. M. Santee, Willsboro, N. Y.
7—Robert Seaman, Hicksville, N. Y.
8—I. L. Whitmyre, Schenectady, N. Y.

YESTERLAID UNIT METHOD OF EGG FARMING

By Rolla C. Lawry, B.S.A., '09

Manager of Yesterlaid Egg Farms Co., Pacific, Mo.

HOW large a flock of hens can we keep together to yield the optimum return on our investment? Where is the point of diminishing returns? These are questions which confronted the Yesterlaid Egg Farms Company when it established its plant at Pacific, Mo.

The optimum return is represented by the greatest number of eggs that can be had for the least expenditure of labor and feed.

It is quite generally agreed that one of the greatest items of expenditure in operating a poultry farm is for labor. Realizing this, it seemed to the management that if a large commercial poultry farm was to be successfully operated it must be by some system whereby the amount of work done by one man could be greatly increased over what was generally expected as the individual limit.

There are in the United States today what is accepted as the two conventional or standard plans for housing and yarding laying hens, i. e. the continuous, or series house plan with single or double yards, and the colony house plan with restricted or unrestricted range. It is by means of a specially designed house and a combination of these two basic plans for handling hens that Yesterlaid Egg Farms Company has so successfully built up its plant of units of 1000 hens.

Where the flocks are yarded, the labor required in caring for them and in keeping the runs renovated is greater than the average returns will warrant. Where the hens are allowed free range, there is a waste of energy on the part of the hens and loss of life and eggs which make this principle unprofitable.

It was after carefully considering and weighing all of these matters that the management conceived the idea of combining all of the good ideas of the various plans of housing and yarding and embodying them in a house which would at once be a colony unit with limited range and possess all the conveniences of a continuous house. The Yesterlaid unit system of Hendwels (The House of a Thousand Leghorns) and enclosed range, then, is an attempt to combine in one, all of the good features of the several conventional plans of poultry management.

An attempt will be made in the limited amount of space alloted for this article to set forth the salient principles of the Yesterlaid unit method of egg farming.

BROODING AND HATCHING.

All hatching is done with a Mammoth Incubator. Eggs are put into the machine once a week, so that there is a continuous stream of chicks coming from the incubator during the hatching season. From the incubator they are taken to a double brooder house two hundred feet long, equipped with a hot water brooding system, which will accommodate twelve thousand chicks at one time.

Throughout the incubator and brooder, strict prophylactic measures are observed, so that from the time the eggs are put into the machine, until the chicks are taken to the open range there is not a chance for disease to creep in. The incubator and brooder are arranged so that each compartment can be quickly and easily cleaned and disinfected.

The chicks are allowed to stay in the brooder house until they are thoroughly feathered and the sexes separated. In this way every possibility of them becoming chilled while they are of tender age is avoided. They are never allowed to go out of doors until they are taken to the range houses. By having the indoor runs roomy and supplying fresh untrampled greens, in the form of lawn or rye clippings, sturdier more rapid growth is obtained and the mortality is also much less.

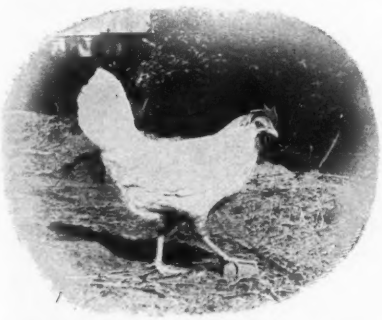
RANGE RAISED.

When the sexes are separated, the females are taken to the range houses, where they are given range over fields of growing crops, and under the shade of nearby groves.

When the pullets are taken from the brooder house, cockerels are carefully inspected for individuals that give promise of developing into superior breeders. These are taken to a range apart from the pullets; the remaining ones are specially milk fattened and sold as broilers.

On the range the chicks are placed in flocks of one hundred to two hundred and fifty in each range house.

They are allowed to run in small temporary yards for a few days until they learn to go in and out of the house; after this they range at will over the fields.



LADY LAYMANY, ONE OF OUR TRAP-NESTED BREEDERS.

When their combs begin to redden and develop, the pullets are taken to the Hendwels and placed in flocks of five hundred where they are fed for early and continuous egg production.

THE LAYERS.

All laying females, except the trap nested breeders, are housed in Hendwels. These houses are large, open, airy, light places, where the hens roost and lay. The exercise rooms are thirty feet square and have cement floors which are littered with wheat straw. These rooms afford an ideal place for the hens to collect and sing during the

A FLOCK OF LAYERS RANGING FROM ONE OF THE HENDWELS IN JANUARY.

days that it is unpleasant for them to be out of doors. They roost and lay five hundred in a flock, and range in large pastures, or fields of several acres, in flocks of from two thousand to three thousand.

The ground food, water and shell are supplied automatically, and the grain is fed by hand. The attendants are all trained to think in terms of comfort for the hens, and are not required to wear themselves to a point of carelessness by having to carry large buckets of feed. Each Hendwel has its own feed bins, which are refilled as often as necessary by wagon, generally once a month. The attendant has to carry only an egg basket.

Weather conditions are such that there is scarcely a day throughout the year when the hens cannot be out of doors, thus insuring strong, fertile eggs. Although very nearly 30,000 eggs for hatching were selected from these large flock collections during Spring of 1911 not a single instance of low fertility or unsatisfactory hatching power was reported. By test the fertility averaged above 95%.

1200 YOUNG PULLETS ON THE RANGE.

THE TRAP NESTED BREEDERS.

For several weeks preceding the first of January the flocks in all the Hendwels are carefully observed for the selection of superior, vigorous females showing evidences of unusual laying power. These individuals are carefully handled and judged according to the American Standard of Perfection and only those most nearly approaching its requirements are used.

These are put into a trap nest house and trapped until it is made sure that they lay a large, uniformly shaped, dead-white egg. Any individual, however good, which does not produce a well shaped, large-sized, perfectly dead-white egg, is discarded as a breeder.

As fast as they prove they are worthy, by their performance in a trap nest house, they are divided into flocks of ten to twenty, mated with high scoring, vigorous males, and placed in small colony houses on an enclosed range. Eggs from these breeders are carefully recorded and the chicks hatched from them marked so that their ancestry can be traced.

This progeny goes into the general laying flock until it has shown its ability to withstand the strain of heavy laying, and then as before is re-selected for the breeding houses.

The greatest profit does not always mean the greatest number of eggs. It is known that very large individual yields can be obtained where the hens are kept in small flocks of ten to twenty-five hens each, but the ratio of labor costs to product receipts is so small that the plan is commercially prohibitive. By the 1000 unit method as above described, the flock production is far above what is generally considered to be a fair average and the man work of the plant is so specialized and divided that one man handles very easily all of the routine work necessary to care for 5000 individuals. The average flock production per hen year for the twelve months ending October 31st has been very close to 140 eggs. This average of course must undoubtedly contain some very high individual records though the performance of the flocks as a whole is remarkably uniform as shown by the daily production percentages.

THIS IS ANOTHER FLOCK OF LAYERS AND ILLUSTRATES THE EXTENT OF RANGE TO EACH UNIT OF 1000 HENS.

RECORDS.

A complete system of records of each day's work, showing feed used, eggs produced, hatches taken off, stock sold or moved comes into the manager's office at the end of the day. At the beginning of each day, instructions for that day are issued to the working superintendent who has charge of all outside work. Sometime during each day, the manager goes over the entire place taking careful notes of anything that might escape the notice of the attendants or the superintendent so that a double check is at all times kept on the work at hand.

THE FERTILITY AND HATCHING POWER OF HENS' EGGS

By C. A. Rogers

Assistant Professor of Poultry Husbandry, Cornell University

EVERYONE naturally wishes to hatch from the best individuals in order to renew the flock with stock which is better, if possible, than the old. By the best individual one means the hen which will economically produce progeny that are better than the average of the flock.

How is this best individual chosen? She is not the individual producing the greatest number of eggs only, or possessing the best shape, etc. She is rather the one which possesses as complete a combination as possible, of all the valuable qualities of high egg production, correct shape, large, well-shaped eggs, etc. Among these desirable qualities are high fertility, and hatching-power of the egg. Other factors remaining the same, high fertility and hatching-power of the eggs means an economical production of day-old chicks.

The question which naturally arises is, "How do fertility and hatching-power of the eggs combine with other favorable qualities in this best hen?" One phase of this question only is dealt with in the following paragraphs, namely, a comparison of the production of the hen with the fertility and hatching-power of the eggs.

The data are taken from two pens of fowls at the New York State Experiment Station at Ithaca. These fowls are a part of certain experiments dealing with the inheritance of egg production and other characters. A total of eighty-two hens are included, representing two seasons of work. The tables include all the eggs that were incubated. They were produced during the spring season of the second year of production.

A comparison of the fertility and hatching-power with the number of eggs produced per hen during the first year of production is shown in Table I. There is a noticeable fluctuation in the fertility of the eggs, regardless of the number laid. If this variability indicates anything at all, it is that the fertility is influenced but slightly, if at all, by the number of eggs produced. On the other hand, the fluctuation in hatching-power shows the eggs from the average good producer to have a higher hatching-power than the eggs from either the poorest or best layers.

A similar comparison is shown in Table II. The division into classes in this table is based upon the production of the second year (the year of production in which the eggs used in these tables were hatched). It is expected that hens will lay fewer eggs during the second year, consequently the division into classes is based on twenty-five less. The results expressed in Table I are substantiated in this table. The high fertility of the lowest producers cannot be considered important since the eggs from only two individuals fall into that class. The best fertility and hatching-power of the eggs lies with the hens of average production (one hundred to one hundred and fifty eggs in the second year) rather than with the hens of extremely low or remarkably high egg production.

In Table III the combined production of the first and second years are used as a basis of classification. The results shown in Tables I and II are confirmed. It will be noticed in these tables that a slight difference exists in the number of hens falling into similar classes. This undoubtedly accounts for the slight variation in the percentage of fertility and hatching-power in the same classes in the three tables. But the combined production of the first and second years undoubtedly provides a more substantial basis of comparison. In this table also the hens of good average production show the greatest ability to produce eggs of good hatching-power. These hens of good production averaged

276 to 325 eggs in two years or approximately 151 to 175 eggs the first year, and 126 to 150 eggs the second year. The heaviest layers consistently show a lower fertility and hatching-power than their less productive sisters. This difference, however, is not very marked and can be explained partly by the fact that their systems are taxed too heavily. At the same time, it is interesting to note that the poorest layers as a rule, do not show as good hatching-power as the medium to heavy producers.

TABLE I—A COMPARISON OF THE FERTILITY AND HATCHING-POWER WITH THE EGGS PRODUCED PER HEN

Eggs Laid First Year of Production	No. Hens	Eggs Incubated	Per Cent Fertile	Per Cent Chicks to Eggs Set
100 or less	11	180	89.4	55.0
101–125	12	197	98.0	64.5
126–150	20	330	94.0	63.8
151–175	17	238	95.4	68.9
171–200	11	141	97.1	55.4
200 and over	11	189	89.0	53.4
Summary	82	1275	93.8	61.2

TABLE II—A COMPARISON OF THE FERTILITY AND HATCHING-POWER WITH THE EGGS PRODUCED PER HEN

Eggs Laid Second Year of Production	No. Hens	Eggs Incubated	Per Cent Fertile	Per Cent Chicks to Eggs Set
75 or less	2	25	100.	56.0
76–100	14	218	87.6	61.4
101–125	24	384	96.1	61.7
126–150	20	303	95.3	64.7
151–175 M	15	223	95.0	56.5
176 and over	7	122	90.2	59.8
Summary	82	1275	93.8	61.2

TABLE III—A COMPARISON OF THE FERTILITY AND HATCHING-POWER WITH THE EGGS PRODUCED PER HEN

Eggs Laid in Two Years of Production	No. Hens	Eggs Incubated	Per Cent Fertile	Per Cent Chicks to Eggs Set
175 or less	5	58	100.	69.0
176–225	11	194	90.8	56.7
226–275	27	427	94.0	63.2
276–325	19	291	95.5	66.0
326–375	16	241	95.4	58.6
376 and over	4	64	82.8	42.2
Summary	82	1275	93.8	61.2

TABLE IV—A COMPARISON OF THE FERTILITY AND HATCHING-POWER WITH THE RATE OF PRODUCTION DURING THE PERIOD OF ACCUMULATING EGGS FOR INCUBATION

Eggs Laid During Period of Accumlating for Incubation	No. Hens	Eggs Incubated	Per Cent Fertile	Per Cent Chicks to Eggs Set
11 or less	14	117	99.2	73.5
12 or 15	22	313	95.4	61.7
16 or 18	25	421	94.8	60.3
19 or more	21	424	90.1	55.8
Summary	82	1275	93.8	61.2

The number of eggs laid during the period of incubation has some effect upon the fertility and hatching-power of the eggs also. It is natural to expect that since a hen has only a specific amount of vitality to put into her eggs that the amount given each egg will decrease in proportion to any increase in the number of eggs produced. This expectation is confirmed in the results shown in Table IV. This table is classified according to the number of eggs laid during the period of accumulating eggs for incubation. A gradual but consistent decrease in both fertility and hatching-power of the eggs occurs in proportion to the increase in production.

From the data at hand it would seem apparent therefore, that the production of eggs beyond a certain limit is obtained only at the expense of some fertility and hatching-power in the eggs. This limit fortunately is high. At the same time the poorer layer does not seem to possess the vitality and energy to compensate for her poor record of production with greater powers of reproduction.

It must be borne in mind however, that these records do not show individual variation. Such variation exists in all classes. It exists in the different hatches of the same fowl in the same season. For example, one individual which laid 448 eggs in two years gave no chicks from 10 eggs incubated in the first setting, but did produce 9 chicks from 9 eggs incubated in the second setting. Another individual laying 375 eggs in two years produced 14 chicks from 19 eggs in two hatches. Still another individual laying 348 eggs in two years produced no chicks, from 20 eggs incubated in two hatches. It is apparent therefore, that although the average moderately heavy layer produces eggs of greater hatching-power than the average extremely heavy producer, there are individuals in the heaviest producing class which do lay eggs of excellent hatching quality.

THE FIFTH ANNUAL FRUIT EXHIBIT

By J. J. Swift, '14

AMONG the many expressions of the efficiency of the work done by the students in the College of Agriculture the Annual Fruit Exhibit of the Department of Pomology occupies an important place. Due to the careful and painstaking work of the committees in charge under the capable supervision of Professor C. S. Wilson the Fifth Annual Fruit Exhibit held Nov. 1–4 eclipsed all former shows both in the quality and the amount of fruit. The exhibit was well attended at all times by students, and by fruit growers in the neighboring regions.

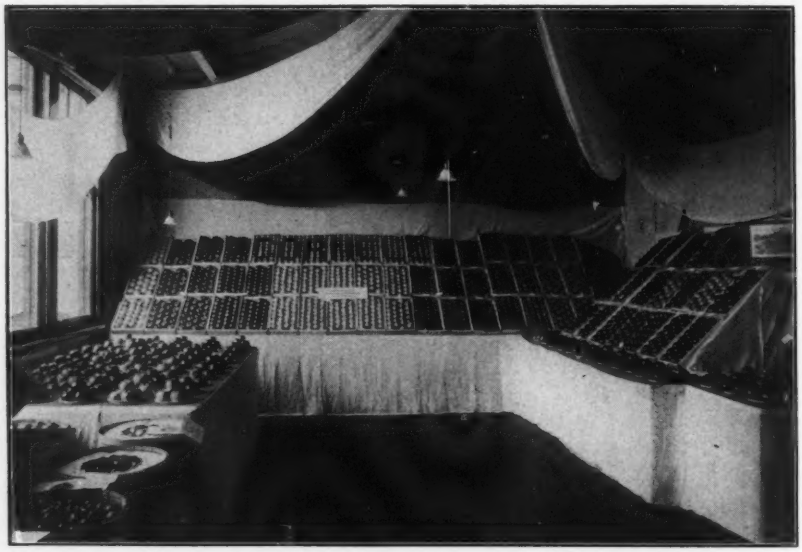
For several weeks before the exhibit, specimens of fruit were sent in from every fruit growing section of the country. Among the states represented were New York, Pennsylvania, Connecticut, Massachusetts, Virginia, West Virginia, Ohio, Colorado, Oregon, and Washington. The work of unpacking, grading, and managing this collection of fruit was done entirely by the students. No little credit is also due the decorating committee for the neat arrangement of the Cornell colors on the stairway and in the hall, and for the good taste in the exhibit decorations. For comparison the plates of fruit were arranged by states. In this comparison New York in no way suffered. The method of labeling, moreover, was particularly effective. Upon entering the room the observer was greeted—not by an array of massive cardboard, but by a veritable sea of red, green, and yellow. There were no less than 87 varieties of apples and 50 varieties of pears. Ellwanger & Barry and D. K. Bell of Rochester again furnished the greater part of exhibit of pears. The alternate arrangement of the boxes of baldwins and greenings and the mass effect of the yellow varieties from the orchard of the College were particularly

attractive. The Department of Entomology, also, had an instructive exhibit showing the insects infesting fruit trees.

The judging was done by a committee of students from the advanced class in pomology.

In several respects this Fruit Exhibit is significant. That such a varied and splendid exhibit of fruit from the orchard rented by the College could be the result of one year's careful cultivation seems almost incredible. The second year after cultivation was begun, this orchard of two acres, hitherto deemed practically worthless, produced 300 barrels of apples! We are led to wonder how many orchards there are in this country, the yield of which could be increased even a thousand percent by similar treatment. It is significant that the students of the college acquire at this exhibit a first hand knowledge of many varieties of fruits. Finally, there is no doubt that New York can grow varieties like the Baldwin and Greening better than any other state. On the other hand, it is unwise for New York growers to compete with the growers of the west in raising Spitzenbergs. In other words, each grower must appreciate the necessity of growing intensely the varieties best adapted to his locality.

In concluding, we would recall the Wenatchee Valley of Washington with its thousands of acres of apple orchards. Here fruit growing is a science. The land is well prepared and thoroughly irrigated. Cultivation is a slogan and skillful packing a necessity. One thousand dollars per acre is a small price for an orchard. And yet, the Wenatchee Valley farmers can grow only certain varieties. We of New York have every advantage—plenty of rainfall, a cooler climate, and good markets that are close at hand. Considering, therefore, the lesson of the Wenatchee Valley farmers, the manifold returns from proper care of orchards in the eastern states, and the earnest coöperation of the fruit growers, we do not hesitate to predict, in leaving behind the exhibit of 1911, an even more successful Fruit Exhibit for 1912.



BOXED APPLE EXHIBIT, CORNELL FRUIT SHOW, 1911.

EGG FARMING FROM A FINANCIAL STANDPOINT

By Aurelia Hooker

Geneseo, N. Y.

HAVING become convinced that there were profits to be made in egg farming about four years ago we determined to try it out.

We were very fortunate in finding a small farm of about twelve acres with south-east slope and gravelly loam which made it well adapted to poultry raising. This is located within the corporation which we find to be a great advantage in marketing products as all express is called for and all feed is delivered from the mill.

We did not have possession until too late in the Spring to do our own incubating, so we bought 1000 S. C. White Leghorn day old chicks and used the Cornell gasoline heated brooders for them. The weather was extremely cold when they were shipped so that several hundred of them died from being chilled. However, we succeeded in raising over 300 fine pullets to put in our laying house in the fall. Our laying house consists of pens 20 ft. by 20 ft. which cost us about $125 each. The first fall we only built the number of pens that were needed for our flock and have since added to it as our flock has increased until this winter the flock numbers 1200 layers. One of the first problems that a woman on a poultry farm must consider is the labor question. One man can easily do the work with some extra help during the brooding season. We have planned to make the labor item as small as possible and in order to lessen the work, have put a trolley through the laying pens, have the water piped with a faucet over each drinking pan, use a gasoline engine for cutting bone and alfalfa and for shelling corn. We do our own incubating and have the principal charge of the baby chicks.

Feed bought in large quantities is cheaper so we buy our wheat for the year when it can be bought directly from the farmers and thus save the middleman's profit, and order meat scraps by the ton. We find that it costs us about $1.20 for feed, litter, etc., to keep a hen a year. Of course, this is for a White Leghorn hen, the heavier breeds would cost more.

We consider that the old hens which are sold in the fall pay for the growing of the pullets to replace them. This year we have grown over twelve hundred pullets. Of these we have over three hundred to sell at from $1.50 to $2.00 each. It costs us about fifty cents to grow a pullet which makes a very good profit for six months' work.

We select our hens especially for vigor and egg type and have very good egg production. Last year, after paying for labor, feed, litter, etc., from eggs alone our hens netted us about $2.25 each. This does not include any of the eggs used in our own incubators or in the house. Our market eggs were sold at wholesale prices through a commission man. We consider that the eggs and chickens used by the family and eggs for incubation would pay the interest on the investment, which is about $4000 for land, tools, buildings and equipment for the poultry plants. This, of course, does not include our dwelling house or land not used for the poultry. These figures are taken from the records which are accurately kept.

Eternal vigilance is the price of success in poultry. To grow chickens well, sanitary conditions must be the best possible. We use the double yarding system for the hens, which are housed in open front houses. The pullets are grown on free range in a corn field; one year in one field, and the next in another.

We feel gratified with the results of our venture and feel that much is due to the help we have received from the Poultry Department of Cornell University.

A RECORD-BREAKING HEN

By James E. Rice and Clarence A. Rogers

Professor of Poultry Husbandry at Cornell University.

Assistant Professor of Poultry Husbandry at Cornell University.

A PHENOMENAL hen is "Lady Cornell," (No. 3211), bred and owned by the Cornell Poultry Department. In her first year of laying this little Single Comb White Leghorn, weighing 3.21 pounds, produced 257 eggs averaging 1.83 ounces each and having a total weight of 29½ pounds, or 9.2 pounds of eggs for each pound of live weight. This is a remarkable performance from a physiological standpoint. It is the highest official experiment station record published in this country.

Dr. W. H. Jordan of the New York State Experiment Station at Geneva, has compared a Leghorn fowl that weighs three and one-half pounds and lays 200 eggs, weighing twenty-five pounds, with a Jersey cow that weighs 1,000 pounds and gives, in a year, 7,000 pounds of milk containing 14% of solids. He states that "if you take the dry matter of the hen and compare it with the dry matter in the eggs she lays in a year, there will be five and one-half times as much dry matter in the eggs as in her whole body. The weight of the dry matter in the cow's body to the weight of the dry matter in the milk will be as 1 to 2.9. In other words, based upon the dry matter, the hen does twice as well as the cow. I suspect the hen is the most efficient transformer of raw material into a finished product that there is on the farm. Her physiological activity is something remarkable. So in that particular the hen stands in a class by herself."

"Lady Cornell," who it is estimated, has in her body 1.414 pounds dry matter, consumed in one year 88.1 pounds of dry matter and produced eggs containing 10.118 pounds of dry matter, or 7.15 pounds for each pound of dry matter in her body.

The illustrations show graphically all on the same scale reduced from life size, "Lady Cornell," "the food she ate," "the eggs she laid" and "her voidings."

The eggs sold on the Ithaca market for $7.43. It is estimated that she ate 110 pounds of food, costing $1.66. The financial statement for the year is estimated as follows:

	Debit	Credit
Food consumed, 110 pounds	$1.66	
Labor	.75	
Interest on investment	.25	
Value of eggs laid, 257 at $.35 per dozen		$7.43
73 pounds manure		.29
	$2.66	$7.72
Net profit, not counting depreciation in value of hen		$5.06

Perhaps still more remarkable is the fact that after her first year's heavy production this hen has laid 189 eggs weighing 22 pounds and is still laying with 32 days before the close of her second year. This makes a total yield of 446 eggs in less than two years.

When we realize that flocks of good hens usually lay on an average about eleven dozens (132) eggs each and rarely exceed twelve dozens (144) eggs per hen, and that the average farm flock probably lays less than 100 eggs per hen per year, the unusual performance of "Lady Cornell" is emphasized.

Only twelve eggs behind "Lady Cornell" is "Madame Cornell" (No. 3352), who produced 245 eggs weighing 30.6 pounds in her first year of laying and has laid, thus far, in her second year, 130 eggs weighing 16.2 pounds, or a total of 375 eggs in 27 days less than two years.

In nearly the same class are others of the same age and variety. Fifteen of the highest producers, including "Lady Cornell" and "Madame Cornell," laid on an average 236 eggs each.

One flock of twelve pullets averaged 182 eggs each.

These high records are due to a combination of circumstances: (1) a good laying strain; (2) careful selection of breeders for constitutional vigor; (3) a suitable ration; (4) fresh air house conditions; (5) care and skill in feeding and management.

"LADY CORNELL"

For the latter the Department is indebted to Mr. W. S. Lyon, Assistant in charge of the investigation pens.

The regular "Cornell ration" was fed as follows:

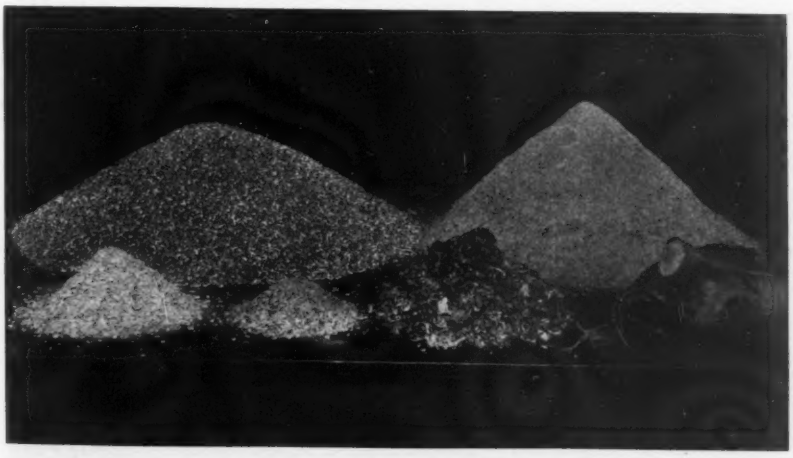
The following whole grain mixture is fed morning and afternoon in a straw litter:

By Weight Winter	By Measure Winter	By Weight Summer	By Measure Summer
60 lbs. wheat	32 quarts wheat	60 lbs. wheat	32 quarts wheat
60 " corn	36 " corn	60 " corn	36 " corn
30 " oats	30 " oats	30 " oats	30 " oats
30 " buckwheat	20 " buckwheat		

The following mash is fed dry in a hopper kept open during the afternoon only:

By Weight Winter and Summer	By Measure Winter and Summer
60 lbs. corn meal	57 qts. corn meal
60 " wheat middlings	71 " wheat middlings
30 " wheat bran	57 " wheat bran
10 " alfalfa meal	20 " alfalfa meal
10 " oil meal	8 " oil meal
50 " beef scrap	43 " beef scrap
1 " salt	½ " salt

The fowls should eat about one-half as much mash by weight as whole grain. Regulate the proportion of grain and ground feed by giving a light feeding of grain in the morning and about all they will consume at the



THE FEED SHE ATE IN ONE YEAR—110 POUNDS.

THE EGGS SHE LAID IN ONE YEAR—257, WEIGHING 29.5 POUNDS.

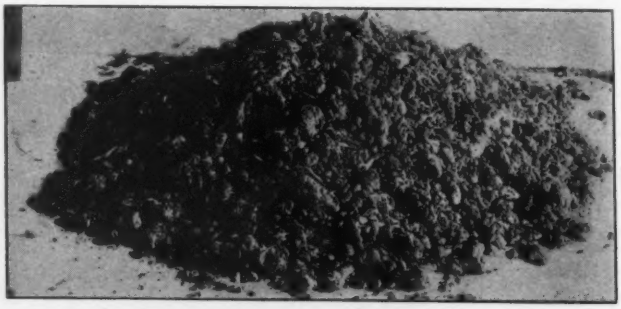
afternoon feeding (in time to find grain before dark). In the case of pullets or fowls in heavy laying, restrict both night and morning feeding to induce heavy eating of dry mash, especially in the case of hens. This ration should be supplemented with beets, cabbage, sprouted oats, green clover or other succulent foods, unless running on grass covered range. Grit, cracked oyster shell, granulated bone and charcoal should be accessible at all times.

The record of the hen, "Lady Cornell," furnishes an instructive though startling evidence of human triumph in handling the forces of nature. Witness the gradual evolution of the domestic fowl through centuries from several species of wild jungle fowl to be found even now in India and Ceylon. These primitive fowl, like partridges, lay less than two dozens of eggs per year. "Lady Cornell" serves to point out the way to higher and still higher production. She is simply one of the advance guards in the march of the great army of hens in their upward development of domestication,—hen civilization,—by the guiding hand of man.

Phenomenal performance in egg production, like performance in all animal production, serves to point out the *possible* rather than the *probable* yield. There is a sharp distinction between the two. Commercially we must reckon with the high average rather than with the exceptional individual.

A phenomenal individual among domesticated animals is to the breed what a genius is to the human race, an exception, but one to be prized and treasured as indicating the "high water mark" in the rising tide in the evolution of the species.

"Lady Cornell" is, literally and figuratively speaking, a "rara aves;" she is a hen genius.



HER VOIDINGS IN ONE YEAR—73 POUNDS.

WHAT ARE PROFITS?

By G. F. Warren

Professor of Farm Management at Cornell University

THE word profits is persistently misused by agricultural colleges as well as by farmers. The inaccurate English is bad enough, but the misleading conclusions are much worse as they result in losses to farmers.

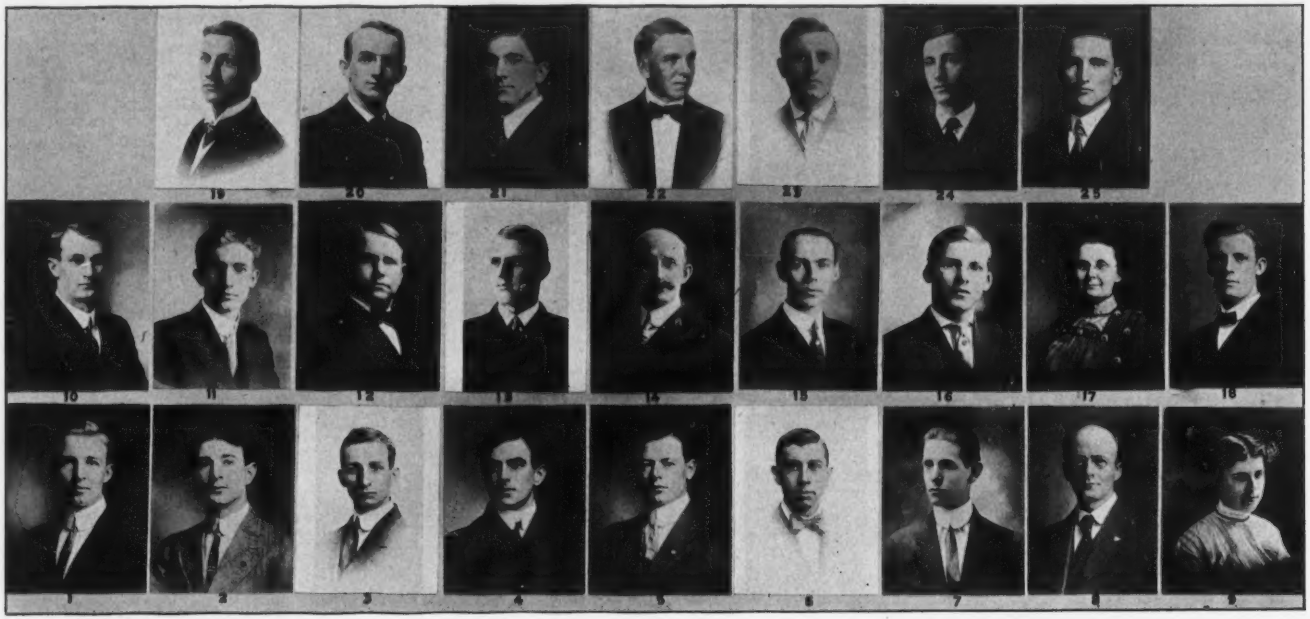
Nearly all bulletins on fertilizer tests call the value of the increased crop less the cost of the fertilizer "profit" or "net profit." But it usually costs $1 to $2 per ton to haul fertilizer from town; the application of the fertilizer costs something; the use of the money for the season is a very important item; the harvesting and storing of the increased crop costs something. To ignore all these items and call the difference between the value of the increased crop and the cash cost of the fertilizer "profit" is very misleading. We ought to call this difference "the value of the increase above the cost of the fertilizer" or use some other accurate statement.

The prices at which crops are figured are often much more than farmers can get. It seems to the writer that the average farm price for the state for a period of five years as given in the Yearbook of the Department of Agriculture is a good price to use. It is interesting to see the comparisons made by different departments. At the New York State Fair this year, one state institution showed charts that valued corn silage at $7.00 per ton. They were showing the profits from growing corn. Another institution was showing how rich you could get by feeding cows. They valued corn silage at $2.50 per ton. The agronomy department of one college values manure including the cost of spreading at 50 cents per ton. This shows a great profit from using it as a fertilizer. The dairy department in the same institution credits the cows with manure at $1.50 in the barn. Probably it would cost at least 50 cents more per ton to haul and spread it. This same dairy department charges cows with hay at what it costs to grow it, not at what the hay is worth. This ought to make any scrub cow pay, whenever there is a good hay crop.

The difference between the cost of feed and the value of the milk is commonly called profit in bulletins and farm papers, but the feed is usually only from one-half to two-thirds of the cost of keeping a cow. The man labor usually costs from $10 to $30 per cow per year. The use of buildings is usually worth $5 to $15 per cow. The horse labor, the use of equipment, the interest on the investment, the veterinary fees, the male service, and many other items must be considered if we wish to find the profit. Instead of misleading persons by using the word profit, why not say "value of milk above the cost of feed," or invent a new word. A long awkward expression is better than an untruth.

A very recent bulletin uses the word profit in discussing certain systems of farming and tells how many times more profit a farmer will make if he follows a certain system. But when the bulletin is examined, it is found that the only expenses counted are labor, interest and taxes. The farmer who followed the system that gave greatest receipts would not necessarily make any profit at all.

The public will be much better instructed when papers, speakers and bulletins use the word profit both accurately and honestly.



FORMER CORNELL POULTRY STUDENTS WHO ARE NOW CONNECTED WITH POULTRY DEPARTMENTS IN EDUCATIONAL INSTITUTIONS.

1—Earl W. Benjamin
2—J. E. Dougherty
3—David E. Elder
4—J. G. Halpin
5—L. M. Hurd
6—F. S. Jacoby
7—W. E. Kidd
8—W. G. Krum
9—Miss M. W. Lambert
10—J. P. Landry
11—D. J. Lane
12—W. A. Lippincott
13—W. S. Lyon
14—Geo. Martin
15—C. H. Matthews
16—Frank E. Mixa
17—Miss Clara M. Nixon
18—C. L. Opperman
19—A. G. Phillips
20—H. C. Pierce
21—C. A. Rogers
22—T. E. Shreiner
23—L. H. Schwartz
24—R. R. Slocum
25—R. P. Trask

FORMER CORNELL POULTRY STUDENTS

By Clara Nixon and E. W. Benjamin.

Former Students who are now Connected with Poultry Departments in Educational Institutions, and Their Contributions to the Poultry Literature of Colleges or Experiment Stations

IT HAS seemed fitting, that with a history of the development of the Poultry Department at Cornell University, there should appear a record of those persons who are engaged in college or Experiment Station work, in Poultry Husbandry. A list of bulletins and articles on Poultry subjects written by these persons and appearing in College and Experiment Station publications, may also be of interest to the COUNTRYMAN readers. Just as important, but more difficult to classify would be a larger group of former students who are successfully engaged in commercial poultry enterprises.

A group picture of twenty-five former students now connected with Poultry Departments has been assembled and will be found on another page. The persons here mentioned have taken poultry work at the New York State College of Agriculture, either as regular or special students, or in the Winter Poultry Course. Following is an alphabetical arrangement, the present addresses, the official positions and literary contributions of each:

BENJAMIN, EARL W., B.S.A., '11
Instructor in Poultry Husbandry, Cornell University, Ithaca, N. Y. 'Lessons on Grading and Packing Eggs for Market," Cornell Rural School Leaflet (*Boys and Girls*).

DOUGHERTY, J. E., B.S.A., '11.
Instructor in Poultry Husbandry, Purdue University, Lafayette, Ind.

ELDER, DAVID E., '12
Student Assistant in Poultry Husbandry, Cornell University, Ithaca, N. Y.

HALPIN, J. G., B.S.A., '05
Ass't Prof. of Poultry Husbandry, University of Wisconsin, Madison, Wis. "Poultry Raising on the Farm," Mich. Agricultural College Bul. No. 245.

HURD, L. M., W.P.C., '09
Ass't in Poultry Husbandry, Cornell University, Ithaca, N. Y.

JACOBY, F. S., B.S.A., '10
Instructor in Poultry Husbandry, Ohio Agricultural College, Columbus, O. "A Poultry Primer," Kan. Agr. Education, Vol. 3, No. 15.

KIDD, W. E., W.P.C., '09
Ass't in Poultry Husbandry, Purdue University, Lafayette, Ind.

KRUM, W. G., W.P.C., '06
Sup't of Plant, Poultry Dept., Cornell University, Ithaca, N. Y. "Lessons on Fattening Poultry," Cornell Rural School Leaflets (*Boys and Girls*).

LAMBERT, MISS M. W., W.P.C. '.10
Teacher of Poultry Husbandry, Georgia Normal and Industrial School, Milledgeville, Ga.

LANDRY, J. P., W.P.C., '09
Poultry Manager and Lecturer Agricultural College, Truro, Nova Scotia.

LANE, D. J., W.P.C., '09
Instructor and Poultryman, University of Minnesota, St. Paul, Minn. "Poultry Houses," Minnesota Agricultural Extension Bul. No. 8.

LIPPINCOTT, W. P. C., '08, B. S. A., Iowa. '11.
Ass't Prof. of Poultry Husbandry, Iowa Agricultural College, Ames, Ia. "Trussing and Boning Chickens for a Fancy Trade," Iowa State Col. Bul. No. 125.

LYON, W. S., W.P.C., '06
Ass't in Investigation, Poultry Dept., Cornell University, Ithaca, N. Y.

MARTIN, GEO., W.P.C., '10
Ass't in Poultry Husbandry, Cornell University, Ithaca, N. Y.

MATTHEWS, C. H., W.P.C., '09
Ass't Instructor and Poultryman, University of Minnesota, St. Paul, Minn.

MIXA, FRANK E., W.P.C., '10
Ass't in Poultry Husbandry, Iowa Agricultural College, Ames, Ia.

NIXON, MISS CLARA M., W.P.C., '05, Spec. '07
Ass't in Poultry Husbandry, Cornell University, Ithaca, N. Y. New York (Cornell) Experiment Station Bulletins: "Four Methods of Feeding Pullets," (with J. E. Rice), Bul. 249; "The Molting of Fowls," (with J. E. Rice and C. A. Rogers), Bul. 258; "Seven Methods of Feeding Chickens," (with J. E. Rice), Bul. 282; "Feeding

Young Chicks," Cornell Reading Courses for the Farm, Vol. 1, No. 8. Cornell Rural School Leaflets (*Boys and Girls*). Lessons on: (1) Hatching the Eggs; (2) Brooding and Care of Chickens; (3) Feeding the Chickens.

OPPERMAN, C. L., W.P.C., '05

Junior Husbandman, Bureau of Animal Industry, U. S. Dept. of Agriculture, Washington, D. C. Maryland Agricultural College Bulletins: "The Poultry Industry in Maryland," Bul. 138; "Tape Worm Diseases of Poultry," Bul. 139 (with G. E. Gage); "Poultry House Construction as Affecting Egg Production," (Part I) Bul. 146; "The Improvement of the Farm Egg," (with H. M. Lamon), U. S. Bureau of Animal Industry, Bul. 141.

PHILLIPS, A. G., B.S.A. Kansas,'07 W.P.C.,'08

Associate in Poultry Husbandry, Purdue University, Lafayette, Ind. Kansas State College Bulletins: "The Marketing of Eggs," Bul. 162; "The Selection and Feeding of Laying Hens," Bul. 164. Purdue University Newspaper Bulletins: "Indiana Eggs are Bad," Bul. 174; "How to Detect Bad Eggs," Bul. 175; "How to Produce Good Market Eggs," Bul. 176; "Methods of Egg Buying," Bul. 177.

PIERCE, H. C., B.S.A., '07

Professor, Bureau of Chemistry, U. S. Dept. of Agriculture, Washington, D. C. Iowa State College Press Bulletins: "Home Preservation of Eggs," Bul. 17; "Lice on Fowls," (with R. L. Webster) Bul. 18; "The Common Chicken Mite," Bul. 19; "A Knife for Killing Poultry," U. S. Bureau of Chemistry Leaflet; "The Effect of the Present Method of Handling Eggs on the Industry and the Market," (with M. E. Pennington). U. S. Dept. of Agriculture, Year Book, Separate, No. 522.

ROGERS, C. A., M.S.A., '07

Ass't Prof. in Poultry Husbandry, Cornell University, Ithaca, N. Y. N. Y. (Cornell) Experiment Station Bulletins: "The Molting of Fowls," (with J. E. Rice and C. M. Nixon) Bul. 258; "Building Poultry Houses," (with J. E. Rice) Bul. 274; "Principles of Brooding," (with J. E. Rice) Bul. 277; "Labor-saving Poultry Appliances," (with J. E. Rice) Bul. 284. Cornell Rural School Leaflets (*Boys and Girls*). Lessons on: (1) Winter Quarters for the Pullets; (2) Feeding for Winter Eggs; (3) Preserving Eggs in Water Glass.

SCHREINER, T. E., W.P.C., '07, Spec. '09

Sup't of Plant, Kansas Agricultural College, Manhattan, Kan.

SCHWARTZ, L. H., B.S.A., '11

Instructor in Poultry Husbandry, University of Wisconsin, Madison, Wis.

SLOCUM, R. R., B.S.A., '06

Animal Husbandman, Bureau of Animal Industry, U. S. Dept. of Agriculture, Washington, D. C. "Capons and Caponizing," U. S. Bureau of Animal Industry Cir. 107; "Marketing Eggs through the Creamery," U. S. Farmers' Bul. 445; "Capons and Caponizing," U. S. Farmers' Bul. 452.

TRASK, R. P., W.P.C. '07

Ass't in Poultry Husbandry, Cornell University, Ithaca, N. Y.

ANIMAL FOOD FOR CHICK REARING

By Clara Nixon

Assistant in Poultry Husbandry, Cornell University

THAT fowls are great meat-eaters must be apparent to the most casual observer. They are constantly on the alert to appropriate to their own consumption most forms of insect life within their reach. A hen with a brood of chicks is especially active in this direction, finding (if allowed to range) enough insects and earthworms to supply her brood with a good proportion of animal food. Chicks reared in brooders may need as much animal food as the hen-reared chicks, but they are not able to procure it by their own effort. That animal food of some sort should be supplied to artificially reared chicks is conceded by most poultry. men; but the kind of animal food to be given, and the proportion of this material to total food, is an open question.

The most common sources of supply of animal food for chick-feeding are: meat scrap, eggs, skimmed milk, and granulated milk. A third-grade powdered milk has been fed in connection with a ration containing beef scrap, and with good success. Unfortunately this product is not now on the market.

Meat scrap is one of the most useful and convenient of the animal foods used for chicks, but must be absolutely

without taint or mustiness, if it is to be used for this purpose. It is rich in protein and (if it contains a good proportion of bone) in mineral matter, which are necessary for the building up of the muscles, bones and feathers of the chicks. Rhode Island Bul. No. 145 says that in experiments at that station, high-grade beef scrap proved to be one of the best protein concentrates, and was superior to animal meal in rations containing the same amount of protein. Beef scrap varies much in condition and composition, and only the best should be used for young chicks. Sifted beef scrap usually has a smaller percentage of ash, but the addition to the ration of some material, rich in the minerals needed, will remedy this defect.

Bone meal or cracked bone are largely used to correct the deficiency in available mineral matter which exists in most chick rations, even those containing a good per cent of beef scrap. Rhode Island Bul. No. 126 states that it has been demonstrated at that station that phosphorus and lime are as necessary as protein for chick rearing. N. Y. (Geneva) Bul. No. 242 advises the use of bone for supplying these materials, rather than bone ash or Florida rock.

Eggs are well liked, and are extensively used in "starting" the chicks, or during the first week or ten days after hatching. They are usually boiled hard and mixed (shells and all) with bread crumbs or rolled oats. Eggs are, however, expensive food, unless the infertiles from incubation are used.

Skimmed milk is one of the best and cheapest of the animal foods, and seems to induce a more rapid growth on the part of the chicks than would be expected from the amount of food materials it contains. It is claimed that in chick feeding the acid of the sour milk has a medicinal effect. It was shown by experiment at the Indiana Experiment Station that the addition of skim milk to the ration of growing chicks, increased the efficiency of the other foods consumed, and that the period of greatest growth of the chicks was also the period of greatest milk consumption. (Indiana Bul. No. 71 and 76). New York (Geneva) Bul. No. 39 says that skimmed milk can be as profitably fed to chickens as to swine.

Sour milk curd or "cottage cheese" is valuable, but should be carefully fed so that the chicks do not get too much of it at any one time.

Granulated milk or milk albumen has given good results in chick rearing, especially when fed in connection with a ration containing beef scrap; but does not seem to be quite equal for this purpose to the sour skimmed milk. Bul. No. 126 of the Rhode Island Experiment station states that although by the addition of ground bone, milk albumen may be made as efficient for chick feeding as animal meal, it may not be possible to induce the chicks to eat enough of the milk albumen ration to produce as rapid growth as on the animal meal ration.

How far milk and its products may be substituted for meat food, has not been proved by experiment. It has been shown, however, that a ration containing meat food may be improved in efficiency by the addition of sour skimmed milk. In an experiment conducted at the Cornell Station, a ration consisting of cracked grain, ground grain and beef scrap, with plenty of green food, was fed to a flock of 100 chicks just from the incubators. An exactly similar ration, to which sour skimmed milk had been added for moistening the mash, was given to a similar flock kept under the same conditions. The results were as follows:

	Without milk.	With milk.
Number chickens put into flocks	100	100
Number chickens left at 8 weeks old	89	91
Weight of flock ot 8 wks. (lbs.)	56.10	64.23
Average weight of chicks (lbs.)	.630	.705
Total gain in 8 wks. (lbs.)	47.97	56.22
Pounds dry matter in food to 1 lb. gain in wt. of flocks	3.76	3.51
Pounds dry matter in food, 1 lb live wt. of flocks	3.21	3.07

It will be readily seen from these figures that the flock having the skimmed milk made considerably better gain in eight weeks, and that for each pound of gain, less food material was required than for the flock which did not have the milk. The chicks having the milk in their ration ate more food per chick than the comparison flock, but consumed less dry matter per pound live weight.

In order to test the efficiency of eggs as compared with meat scrap, two flocks of 100 chicks each were fed on similar rations, except that, for the first three or four weeks, practically all the animal food of the one flock was furnished by eggs and sour skimmed milk, while the second flock was given beef scrap and milk to furnish about the same amount of animal protein as was consumed by the comparison flock. At four weeks old, the flocks were still about equal in numbers, but the chicks which had the eggs weighed 26.40 lbs. per 100 chicks, while those having the beef scrap weighed 31.60 per 100 chicks. The growth induced by the egg ration was more expensive than given by the beef scrap ration.

After four weeks, these flocks were fed alike, but the chicks which had been given meat scrap from the start, continued larger to 12 weeks old than those which were started on the egg ration, and were always better in appearance and activity.

Further experiment would be necessary before any definite percentage of meat scrap to total food could be decided upon as the *best* proportion for chick feeding. The most generally approved proportion seems to be six to ten per cent during the first two weeks, a larger proportion of the meat being allowed as the chicks grow older. Good results are obtained by this method, if other conditions are favorable. It has been demonstrated, however, that chicks may eat a larger proportion of meat without injury, and make good growth on the ration. N. Y. (Geneva) Bul. Nos. 149 and 171 report experiments where a ration in which 37 per cent of the protein was derived from meat food, was fed to growing chicks, with much better results in health and growth than were obtained by a similar ration in which all the protein was of vegetable origin. In a test of seven different rations for chick feeding at the Cornell Station (unpublished data) the proportion of meat food to total food, where hopper-feed beef scrap was supplied in connection with a well-balanced ration, was from 13 to 16 per cent, for the first two weeks; decreasing as the chicks grew older. No ill effect due to the practice of hopper feeding beef scrap was seen at any time. Experiments at the Rhode Island Experiment Station also supported the practice of hopper-feeding beef scrap to young chicks, especially in connection with a highly carbonaceous ration (R. I. Bul. 145). Just the limit in meat food consumption has not been shown, but in the case of the experiment at the Cornell station, it was evidently well under 30 per cent of the total food. One flock, given an unsatisfactory ration, with hopper-fed beef scrap, ate over 30 per cent of total food in meat, and eighty-nine per cent of these chicks died before seven weeks old. Whether this was due entirely to the proportion of beef scrap or whether part of the trouble was caused by the lack of some necessary element in the food, was not proved.

In the chick-feeding experiment above mentioned, the chicks which for the first few weeks were given a limited amount of beef scrap in their food, weighed 63.9 lbs. per 100 chicks at eight weeks old, while those which from the beginning were given all the meat scrap they wished, weighed 70.5 lbs. per 100 chicks, at the same age; 10.9 per cent additional gain, for the greater proportion of meat.

Whether the more rapid early growth is a distinct advantage, where the chicks are to be kept for layers, remains to be proved.

THE STOCK JUDGING TEAM

By E. G. Misner, '13

AS HAS been the custom for the past three years, the College of Agriculture, this fall sent a team of three men to compete in the Students' Judging Contest, at the National Dairy Show held in the International Amphitheater at Chicago. All of the previous teams have been very successful. The first team representing Cornell secured fifth place; the second team came up to second and captured the Jersey cup, while last year's team was the champion team of the contest. Of the five trophies offered, these men brought four home to remain in possession of the college for one year The team this year were less fortunate.

Competition for this year's team was keen and close. After a month of work the men selected were J. S. Clark, F. H. Clothier and E. G. Misner The team arrived in Chicago, Thursday morning, October 26th. The contest was held the next day as follows: Thirty young men representing ten different institutions participated. Two rings from each breed, one of four bulls and one of four cows were judged. The breeds were Ayrshires, Holsteins, Jerseys and Guernseys. The thirty students were divided into four groups, each with an official in charge. Each student was given fifteen minutes to examine a ring and write his placings on a card, which bore only his group number and his designation number. He was then given fifteen minutes to write the reasons for his placings. The cattle in the ring were scored and placed by the three judges, G. T. Bell of Washington, Professor Haecke and J. L. Doyle, or Narbeth, Pa., who separately graded the papers of the contestants. A perfect score was 100 each for reasons and placings. For each animal out of place, fifteen points were deducted. At 8 o'clock, Saturday evening, the instructors and the men of the contest assembled to hear the report. This year every cup and scholarship went to colleges that had never before won anything.

Two Breeders' Associations each offer a scholarship amounting to $400 to the man scoring highest in the respective breeds, this to be used for post-graduate study. Both T. B. McNatt of Missouri, who won the Holstein scholarship, and Ivan McKillip of Nebraska, who won the Jersey, are taking their work at Cornell.

For the benefit of those who might wish to try out for the trip next year, it might be well to consider briefly what constitutes the training. An advanced class in stock judging meets Saturdays of the first week during the first semester, and in the second term on the same day from Easter till June. This is open to all who have had Course I in Animal Husbandry. As the college herd does not supply sufficient material for practice in both this and the elementary course, frequent excursions are made to herds near Ithaca, and to others of greater reputation which are within convenient distance.

The value of the training received in this course is inestimable. In the first place, the opportunity of close association with a man who is not only foremost in his profession, but who is so able and willing to lend valuable and exact information upon almost any subject, is inspiring. Secondly, the student becomes acquainted with some of the foremost breeders of improved dairy cattle, men, who are not only excellent judges, but who are practical and sound in their suggestions and criticisms. The privilege of studying some of the best individual cattle is also a profitable one. Then too, the training in powers of quick, accurate and sound observation and judgment and in concentration is extremely valuable. Therefore, if a student works and does not make the team, or if he makes the team and fails to win in the final clash, he can never regret the time spent in this course of Stock Judging.

The Cornell Countryman

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DECEMBER, 1911

The Administrative Situation

A meeting of the Trustees' Committee of which Ex-president Andrew D. White is chairman, was held at the Cornell University Club in New York City on November 4th. Dr. White made the following statement of its proceedings: "It was in the nature of a preliminary talk. Every member was present, as was also Dean Bailey. A feeling prevailed that both the University and the Agricultural College had entirely outgrown their limitations in relation to agricultural instruction. Various plans were proposed, all tending to give a much larger measure of selfgovernment to the College. After a general discussion a sketch was made of a plan embodying the main ideas brought out during the evening, each article being taken up and notes made for more careful study at a later meeting. There was nothing in the nature of a disagreement regarding fundamental matters. It was felt by all present that this beginning was fortunate, and that on the lines laid down a workable plan can be developed. There is a universal feeling that with such a plan Professor Bailey can be induced to remain at the head of the College to put into effect during the coming years the plan in all its details."

Ex-president White, in a recent conversation with the Editor of the CORNELL COUNTRYMAN, stated that there should be another meeting of the Trustees' Committee early in December, at which time he believed the recommendations of Dean Bailey would be shaped to the satisfaction of all concerned, and would then be ready to present to the full board of Trustees at their next meeting, to be held the first week in January. The express purpose of all the plans outlined is to give as large a share of self-government to the State College of Agriculture as is consistent with the charter of the University. He said also that there was every reason to believe that the recommendations of Dean Bailey would be passed without a hitch.

The Alumni will be much gratified at this indication of readjustments in administrative matters of the College of Agriculture, and will await with deep concern, and hopefulness the future work of the Trustees' Committee.

Winter Course Students

To the Winter-Course students who have returned for another course, and to those who have come here for the first time, THE CORNELL COUNTRYMAN desires to express on the part of the students a most cordial and hearty welcome. We welcome you as an important and familiar part of the student body, and we hope you will

join us in becoming an active element of the student body.

A splendid opportunity is before you and we hope you will take the fullest advantage of it. You will, of course, have your clubs, your teams and your debates, but besides this you will have offered to you invitations to join the clubs of the college and especially to attend the Agricultural Assemblies. Further than this the State is giving you free tuition; the faculty are putting forth their best efforts to give you the most essential instruction in the alloted time; the students are endeavoring to make you acquainted with the faculty and students, and the whole college is putting forth its best efforts to secure for you the greatest possible benefits.

All these things devolve certain responsibilities on you, which as students of the college, you will be expected to shoulder. Your best efforts should be directed toward your work in order that you may gain broader knowledge and increased capabilities, which is the primary reason for your coming here. You should get the spirit of good fellowship from the associations which are opened to you through the activities of the College, and you should accept the buildings as they are given to you from the state, as yours in trust and prove that you are worthy of that trust.

Realize that you are now a Cornellian, that you are upholding the name of Cornell University which stands for scholarship, prowess and clean sportsmanship; and when you depart take with you the true college spirit which does not mean a yell, or a "Cornell" poster on your suitcase, but rather broader knowledge, good fellowship, and high ideals.

The Poultry Association

During the first year of the Poultry Department, Professor Rice was instrumental in organizing the Cornell Poultry Association. The founders of the club had several purposes in mind: first, they wished to hold meetings where those interested in poultry could discuss practical problems of poultry keeping, tell their own experiences, and listen to talks by successful poultrymen. Second, there was also the idea of bringing the members together informally to get better acquainted with the department and with each other and to enjoy a social time together. A third purpose was to spread scientific information relating to poultry among the poultry keepers of the state.

From time to time members have given out of town lectures in connection with the agricultural extension work. Each year an educational exhibit has been conducted by members during Farmers' Week, and several times a poultry show has been given at that time. As soon as the new poultry building is completed, the association is planning to give another show.

The Association has financed itself by the sale of books and other agricultural literature. Members of the Association are on hand during forenoons at the salesroom in the Dairy Department.

It is planned to have some well known poultrymen speak at meetings during the year and members will discuss various phases of the business. The meetings are held once a week on Thursday evening. Any member of the College of Agriculture is eligible to membership.

CAMPUS NOTES

CALENDAR

Dec. 18—Ag. Sophomore Class meeting.
Round-Up Club meeting.
Lazy Club meeting.
Dec. 19—Intercollege Basketball, Ag. vs. Vet.
Ag. Association meeting.
Dec. 20 Instruction ends in regular and special work.
Jan. 3—Instruction resumed.

* * *

The Annual Intercollege Cross Country Race held November 25th was won by the College of Agriculture. M. E. was second, Arts third, and C.E. fourth.

* * *

The second assembly was held on November 2d. In opening, Mr. Knapp referred to the monthly assemblies as "Dean Bailey's evening, and our opportunity." After well rendered piano and violin solos by Miss Nye and Master Gilbert, Dean Bailey urged a royal welcome for the Winter Course students and commented on the growth of the college. He then spoke in part as follows: "During the fifty years in which agricultural colleges have existed there have been many different ideas of what an agricultural education should be. The old idea was that a man should be made to do strenuous manual labor. The modern idea is that an agricultural college should give information. Our college now gives 300 courses. This is the right idea but the ideal of agricultural education has not been reached.

"The greatest fault today is that the voluntary center of interest is not in the class-room but is in outside activities. We cannot say that any man has the right kind of an education who has attained to just a certain amount of information. His education must be also a matter of sentiment and affection. The center of interest must be the Cornell Farm. We must keep in intimate relations with the soil. The solution of rural problems depends upon this. This close acquaintance with nature ought to be a man's background which will shape his whole life.

"We ought to participate more in agricultural nature study. Before a man takes up pomology, for instance, he should know the birds and trees of the orchard. We should study the cow as we do the woodchuck. Certain groups of students might keep track of different phases of farm activities. The Japanese have a day set apart when they observe apple blossoms. Our tendency is to pick them or press them in a book.

"We do not know what it is to enjoy a wind or a rain. We are not naturalists because we have not a nature background. Americans are immersed in politics and other things when their nature background is more important. The great epoch of agricultural education will come when we shall have more of the nature study spirit in our farm work."

A J. I. Case traction engine has been installed in the new Farm Mechanics building and a Case grain separator in a smaller building just north of the laboratory. A farm shop, with a gasoline engine, power grindstone, drill press, forge, etc., where the tools used on the farm can be repaired will be gradually developed. Besides this gas engines are connected with shafting to demonstrate the various forms and uses of power transmission. Altogether, the increase in floor space and the addition of new farm tools is a big improvement over the crowded condition in the old laboratory.

* * *

Dr. Webber spent two weeks in New York City, supervising an Educational Exhibit at the Land Exposition. He was assisted by R. J. Shepard, '10.

* * *

"The Improvement of the Timothy Crop," was the title of an address given by Dr. H. J. Webber before the National Hay Buyers Association at Niagara Falls recently. It has been printed at a part of the eighteenth annual report of the Association.

* * *

The Department of Plant Breeding has begun the distribution of the seed of some of the valuable timothy varieties originated by Dr. Webber. A few trial plats are being planted at the State Schools of Agriculture at Morrisville, Canton and also at Elmira.

* * *

Dr. Gilbert has an extensive article in the forthcoming number of the *American Breeder's Magazine*, entitled, "Suggestive Laboratory Exercises for a Course in Plant Breeding."

The Annual Report of the American Breeder's Association, soon to appear, will contain ten articles by members of the Plant Breeding Department.

* * *

Professor C. S. Wilson acted as judge of the single plates at the New England Fruit Show, held in Horticultural Hall, Boston, in the latter part of October. In December he will speak at the meeting of the Society of Horticultural Science to be held at Washington, on "The Teaching of Pomology."

* * *

The Department of Pomology will hold an apple packing school at the winter meeting of the Western New York Horticultural Society held at Rochester in the latter part of January. Some of the students from the department will do the fruit judging at this meeting.

* * *

The second annual meeting of the American Farm Management Association was held at Columbus, Ohio, on November 14th and 15th. Professors Warren and Lyon both spoke at the meeting.

* * *

We are glad to report that Professor Craig has recovered from his illness and is able to take up his work again.

* * *

The Extension Department is planning to hold ten agricultural schools lasting a week in those sections of the state where the greatest interest is manifest. The teaching will be along the line of farming in general and farm management. Local granges are showing a keen interest in this new idea and the department has already received applications for such schools from twenty-three counties.

* * *

On November 15, Professor Beal of the Department of Horticulture spoke before the Florists Club of Utica on, "Experimental Work in Horticulture."

* * *

The Chrysanthemum Show which was held during the week of the Fruit Show was a pronounced success. Many different varieties of chrysanthemums were exhibited.

* * *

On the evening of November 15th, the Sophomore class in Agriculture held its regular monthly meeting in the Auditorium. After a short musical program, Professor Wilson addressed the class on, "College Habits."

At a meeting of the Lazy Club held November 20th, among other items of interest, was a talk by Dean Bailey, in which he referred to the facilities which he hopes in the future may be provided for the various organizations of the College. It appears probable that the College of Agriculture will gradually be built up, more or less solidly, from the present buildings out to the new barns. He deplored the tendency, as the plant grows larger, of the College becoming a great impersonal pile of buildings, which would have no intimate connection with the personal lives of the students.

In order that this may be prevented, he wishes that some means may be found to obtain separate small buildings for the exclusive use of the various clubs and organizations. These buildings to be small and unpretentious, and to be located at various points where they would harmonize with the architectural scheme, an especial point possibly being made of appropriate planting in connection with them.

The Dean said that he hoped that the Lazy Club and the CORNELL COUNTRYMAN might be among the first to have such buildings. While the funds necessary to the carrying out of the plan are not immediately available, the principal reason for delay is that the ultimate layout of the buildings and particularly the grading and drives etc., has not been perfected, but it is hoped that it may be in the near future.

The Lazy Club is, however, seriously considering the moving of its old building, now disused, to some point, possibly in the neighborhood of the filtration plant. With this as a nucleus, an addition might be built, which would make a suitable home for this, the oldest club in the Agricultural College.

* * *

At the winter meeting of the New York State Fruit Growers' Association held in Rochester the first week in January, there will be a speaking contest in which five students from the Cornell Department of Pomology will take part. A prize of $50 will be awarded for the best speech on some subject connected with fruit growing.

* * *

At a recent meeting of the Agriculture Mandolin Club, Buchanan Tyson was elected leader for the current year.

BOOK REVIEWS

ANIMAL COMPETITORS, by Ernest T. Ingersoll, the Young Farmer's Practical Library Series. Published by Sturgis and Walton Company, 31–33 East 27th Street, New York City; 313 pages; 33 illustrations; price $.75 net.

This book contains accounts and descriptions of all the economically important wild mammals of North America. Its object is to point out to the public how the millions of dollars loss caused annually by the rodents and their relatives, may be stopped and how some of the heretofore neglected mammals may be made of practical use to agriculture, thus changing the needlessly high balance on the loss side to one of profit.

PLANT LIFE ON LAND, by F. O. Bower, Sc.D., F.R.S., Regius Professor of Botany in the University of Glasgow. Published by G. P. Putnam's Sons, 6 West 45th St., New York City; 172 pages; Twenty-seven illustrations. Price 40 cts. net.

This little book is one of the Cambridge Manuals of Science and literature, a series which deals with various aspects of thought, and with recent scientific discoveries. The book reviews, in condensed form, the outlook of modern botany. To the student and to the general reader interested in science the book is full of interest.

THE SOCCER SEASON OF 1911

By H. B. Rogers, '12, Captain

In contrast to the showing made by the Agriculture soccer team of last year, the record of the present season is not particularly encouraging. The 1910 team made a complete sweep, winning every game without being scored on, and setting a pace which the other agricultural teams maintained in such good form as to win the yearly series of intercollege athletics. Although handicapped by the loss of all but three of the previous year's players, the team has been the equal, in nearly every respect, of last year's championship aggregation.

From the first call, a few days after registration, practice was regular and thorough, and the team developed consistently up to the close of the season. The only weakness in the team was the lack of experienced men on the forward line. This was a serious handicap, and kept the team from scoring at critical times. The forwards were aggressive, and kept the ball in the opponent's territory during the greater part of the harder games.

The low standing of the team is due in large part to the fact that the team from Mechanical Engineering, made up almost entirely of experienced men, was met at the very beginning of the season, when our own team was in comparatively poor shape, because of taking on so much new material. The scores for the season show that the teams taking the first three places in the series were very evenly matched. This is emphasized by the fact that Civil Engineering, the winner, defeated Mechanical Engineering only after one tie game had been played. At the close of the season, the agricultural team was the equal of any of the others, though receiving but third place.

Photo by Robinson

I. C. Reed, J. C. Otis, B. H. Chen, L. B. Smith, C. Collado (coach)
L. M. Hayes, R. H. Cross, W. Creifelds, Jr., M. B. Goff, S. C. Leete
G. A. Clark, H. B. Rogers, R. T. Cotton
Absent—N. D. Steve

FORMER STUDENTS

(Former Students: You like to hear from your former college friends, do you not? They are just as interested in hearing from you. Will you send us a few lines so that we can let your friends know where you are and what you are doing?)

ROYAL GILKEY, B. S. A., '08
Recently appointed Instructor in Extension Teaching.

Royal Gilkey became interested in agriculture as a boy by working spare hours on a large market garden farm near Boston. On graduating from high school he was employed for a year as assistant to the superintendent. This directly resulted in a greater interest in farming and a desire for an agricultural education.

On graduating from the College of Agriculture, Mr. Gilkey was employed as assistant manager on a 500 acre farm in this state. The following January he accepted an opportunity to enter the New York State Department of Agriculture. Here he was directly connected with Farmers' Institute Bureau for three institute seasons. During this time executive work was supplemented by visits to farms, institutes, state schools of agriculture, meetings of state agricultural societies and conventions.

In the Spring of 1909, Mr. Gilkey was appointed clerk of the Dairy Products Department of the New York State Fair. He was reappointed to this office on the two following years. His duties have thus been divided between Farmers' Institutes in the winter and spring, and State Fair work in the summer and fall. Additional work has been assigned him such as arranging for the exhibit of the State Departments and Institutions at the 1910 and 1911 State Fairs and the general management of the Boys' Company at the 1911 State Fair.

On October 15, 1911, Mr. Gilkey resigned as technical assistant of the New York State Department of Agriculture to accept appointment as Instructor in Extension Teaching. He is assisting in the Public Speaking course in the Extension Department and supervising the Reading Course for the Farm and the Mailing Department of the College. He is among the administrative officers of the Extension Department.

'97, Grad.—Professor O. M. Morris, who took a year's graduate work in Horticulture is now at the head of the Department of Horticulture at the Washington State College.

Prof. L. B. Judson has been working during the winter with the Department of Agriculture on the transportation of fruits. Prof. Judson was assistant professor in Horticulture here from the fall of 1907 till last January. He is located in Brooklyn, address L. B. Judson, 457 Washington Ave., Brooklyn, N. Y.

'01, B.S.A.—A daughter, Carolyn Louise, was born on May 13, at Rio Piedras, Porto Rico, to Mr. and Mrs. D. L. Van Dine, (Carolyn B. Gaylord, '99.) Mr. Van Dine is Entomologist at the experiment station of the Sugar Producers' Association of Porto Rico.

'02, M. A.; '04, Ph.D.—Dr. Fred W. Foxworthy, lately of the Bureau of Science, Manila, is now with the

College of Agriculture and Forestry, Los Baños, Laguna Province, Luzon, P. I.

'02, B. S. A., '05, M. S. A.—G. W. Hosford, who is manager of the San Dimas Lemon Association, visited the College of Agriculture recently. This organization, which is one of the largest coöperative organizations handling lemons, employed Mr. Hosford in order to put in practice the results of the investigation by the Department of Agriculture regarding the better handling of citrus fruits. While here he spoke before the Lazy Club. His address is U. S. Dept. of Agriculture, Washington, D. C.

'03, B. S. A.—William J. Ward's address is Gold Beach, Oregon. He is forester of the Brookings Lumber & Box Company of Highland, Cal., vice-president of the Gold Beach Lumber Company, general manager of the Southern Curry Telephone Company and vice-president of the Curry County Bank.

'05, M. S. A.—Professor W. S. Thornber recently resigned his position as head of the Department of Horticulture at the Washington State College to take a position as General Manager of the Lewiston Land and Water Co. This company has thirty-six hundred acres of fruit at Lewiston, Idaho.

'06, B. S. A.—Wilfred G. Brierly is now an Institute Worker for the Washington State College.

'07, B. S. A.—H. F. Prince is now manager of the Bailiwick Ranch, a large fruit farm at Grand Junction, Colorado. His address is Mr. H. F. Prince, Bailiwick Ranch, Grand Junction, Colo.

'07–'08, Grad.—E. J. Petry is at present an assistant in the Department of Agronomy at Purdue University. While here he was an Assistant in Botany.

'08, B. S. A.—Mr. A. W. McKay is employed by the United States Department of Agriculture, Washington, D. C., and has been working on the apple industry in California. He is now transferred to Florida, where he will work on the citrus fruits.

'08, B.S.A., '10, M.S.A.—M. C. Burritt has resigned as assistant agriculturalist in the office of Farm Management, United States Department of Agriculture at Washington, D. C., and has accepted the position of editor of the *New York Tribune Farmer*, at New York City. His residence address is 611 West 158th Street.

'09, B. S. A.—On October 25th, 1911 Walter W. Bonns was married to Miss Emily B. Cornish at Boston, Mass. Mr. and Mrs. Bonns are now at home at Orono, Maine.

'09, B. S. A.—S. P. Hollister, who has been working at Hampton Institute, Virginia, has recently accepted a position as instructor in horticulture at the Connecticut Agricultural College, Storrs, Conn.

'10, Ph. D.—J. P. Stewart, is professor of experimental horticulture at the Pennsylvania Agricultural College. Dr. Stewart has done some excellent work on orchard fertilization. His address is Prof. J.P. Stewart, State College, Pennsylvania.

'10, M.S.A.—H. B. Cowgill is at the experiment station of the Sugar Producers' Association of Porto Rico, Rio Piedras, P. R.

'10, B. S. A.—Cornelia F. Kephart is assistant entomologist at the New Hampshire Experiment Station, Durham, N. H.

'11, B. S. A.—Harlow C. Wheaton was visiting on the campus recently.

'11, B. S. A.—F. H. Perl was appointed city forester at Minneapolis, Minn., commencing work there on July 1st last. His work has included the making of plans and estimates for planting 5000 shade and ornamental trees. Some 74 men and 14 teams are employed in this work. Mr. Perl has also given several lectures before the civic clubs of the city.

'11, B. S. A.—James P. Terry is instructor in dairy husbandry in the University of Illinois. His address is 709 West Nevada Street, Urbana, Ill.

GENERAL AGRICULTURAL NEWS

At the last meeting of Congress, Representative David J. Lewis from Maryland, introduced a bill proposing government management of the express business of the country. His reasons for this bill are: first, that the present express rates are exorbitant; and secondly, that express companies do not benefit the farmers and country merchants, who constitute nearly half of the population of the United States. His plan differs from parcels post schemes in that the latter limit the weight of packages to 11 pounds, thus tending to take business away from the country merchants. His plan, having no such weight limit would help country merchants, by bringing goods to their stores. Representative Lewis says that he has worked out a system of rates, by which, for example, a package weighing 5 pounds could be sent 196 miles for 11 cents, while for this same service, the present express rates are 25 cents or more.

* * *

According to a recent editorial in *Wallace's Farmer* the agricultural interests of this country are soon to be brought into serious competition with products of South America. The single country of Brazil is larger than the whole United States, except Alaska. One South American company backed by American capital, has a ranch in Brazil comprising five million acres, or about one-sixth the area of New York State. This ranch is expected to support five hundred thousand head of cattle and a like number of hogs. The company owns a railroad, steamship lines and will build three packing houses where the meat of the ranch will be packed.

* * *

The Congress of the American Association for Highway Improvement was held at Richmond, Virginia, beginning Nov. 20. In the official program of this big road congress there is a list of speakers, which includes many of the most brilliant men in the country. On the first day, National Day, the speakers included President Taft, Gov. Mann of Virginia, and other noted speakers. The third day of the congress was Road Users Day. This part of the program was under the auspices of the Touring Club of America and was devoted to a discussion of the various problems of traffic regulations. Moving pictures showing the effects of good and bad roads lent considerable interest. It was shown that the high cost of living has been due to a considerable extent to the difficulty of getting farm products to the railroads for shipment at the "bad roads" season.

* * *

At the thirty-first annual session of the Farmers National Congress held at Columbus, Ohio, Mr. Hayes, Assistant Secretary of Agriculture, suggested that the Congress reorganize into a national country-life federation. The organization proposed would be made up of delegates from state federations and farmers' associations, together with representatives of colleges and experiment stations. It would be a general clearing house for campaigns to improve rural conditions.

* * *

It is interesting to note the prosecutions which the United States Department of Agriculture is conducting for violations of the Pure Food Law. Several tomato canners have been called to account for unsanitary methods shown by the bacteria found in their products. In one brand the bacteria averaged 185,000,000 to the cubic centimeter. The Department is going after patent medicine men with a vengeance. Even where the label contains not a technical mis-statement but an implied one the offender is prosecuted. Dr. Wiley, the merciless foe of food and drug frauds, will have charge of this work in the future.

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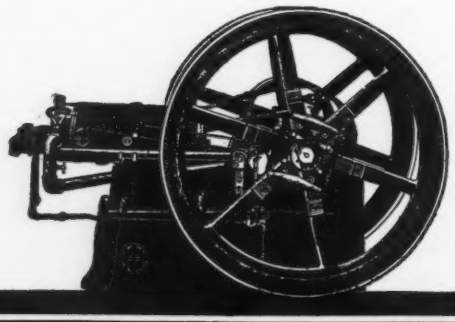

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I H C Service Bureau

The bureau is a center where the best ways of doing things on the farm, and data relating to its development are collected and distributed free to everyone interested in agriculture. Every available source of information will be used in answering questions on all farm subjects. Questions sent to the I H C Service Bureau will receive prompt attention.

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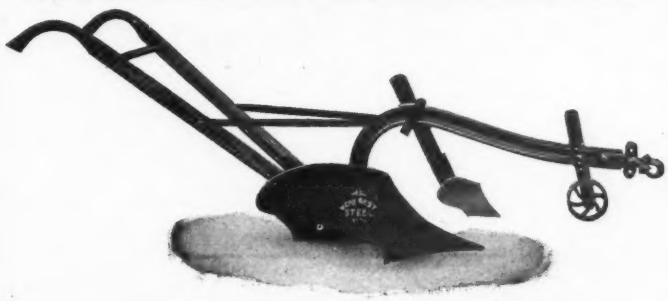

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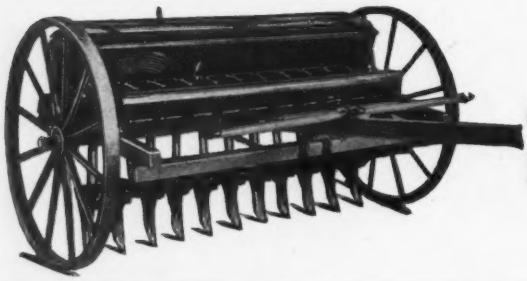

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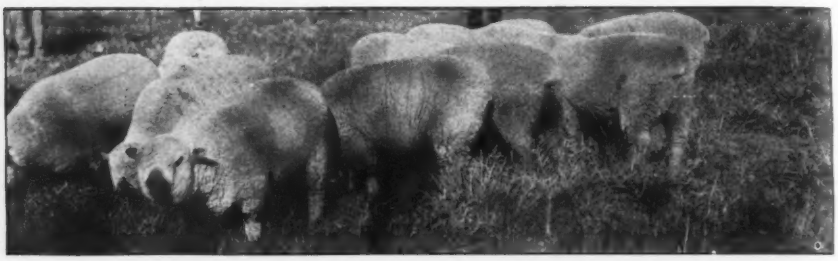

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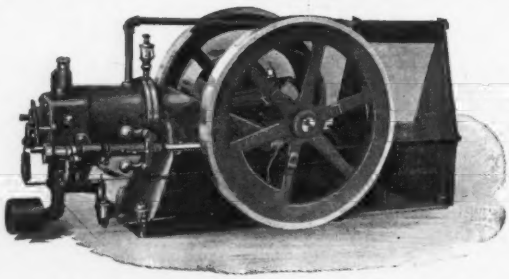

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For the past four years the great state of Pennsylvania has made a special appropriation of from $30,000 to $40,000 annually to teach the fruit grower how to use Lime-Sulfur washes, and incidentally to warn them against the use of "Scalecide," in spite of which the demand for "Scalecide" has increased from year to year and apples from trees sprayed with "Scalecide" for five years took all the first prizes at the Pennsylvania Horticultural Society meeting in 1910; three silver cups, the Adams County sweepstakes and 20 first prizes at the meeting of the same society in 1911. Which pays best? Prize apples or cider apples? "Scalecide" has no substitute. A postal request to Dept. A will bring you by return mail, free, our book, "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "SCALECIDE, the Tree-Saver." If your dealer cannot supply you with "SCALECIDE" we will deliver it to any R. R. Station in the United States east of the Mississippi and north of the Ohio Rivers on receipt of the price: 50-gal. bbls., $25.00; 30-gal. bbls., $16.00; 10-gal. cans, $6.75; 5-gal. cans, $3.75. Address, B. G. PRATT COMPANY, 50 Church Street, New York City.

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Pure cultures of *Bacillus bulgaricus* and *Bacillus lactis acidi*, also a special mixed culture for preparing at home as well as in creameries and other institutions the Bulgarian type of fermented milk now so much in demand owing to its exceptional medicinal and nutritive qualities.

Full particulars accompany the Culture for preparing Starter and manipulating the milk or cream for making butter, cheese or commercial buttermilk.

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OUR New Catalog of Dairymen's Supplies should be in the hands of every owner of a cow. It is filled from cover to cover—contains 87 pages—with valuable information about modern dairy apparatus and utensils.

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It will show you the latest models in **butter churns and workers, milk testers and testing supplies, tinware, stable fittings and supplies, engines, boilers, silos** and everything in use on the modern dairy farm at the lowest prices.

UP-TO-DATE EQUIPMENT ADDS TO DAIRY PROFITS

We can help you in many ways to bigger dairy profits. Our organization covers the entire country and is in close touch with the latest and best methods of dairying everywhere. Write us freely on any subject connected with dairy equipment and methods.

We manufacture equipment for every kind or size of dairy plant and equip more modern plants than all other concerns combined.

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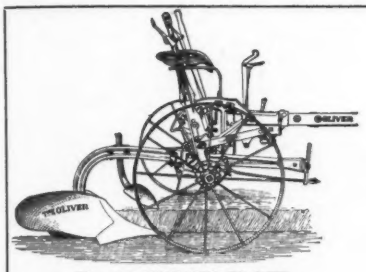

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No implement on the farm compares with the plow in usefulness and to do good work the plow should be the right kind—an Oliver.

The Oliver No. 26 Sulky Plow is at the head of its class. The entire construction of the plow is worthy of consideration. Of all the plows ever offered, the No. 26 affords the greatest comfort and really encourages the tired man to work.

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FRIDAY, FEB. 23, 1912, Farmers' Week

The Department of Animal Husbandry will offer its surplus live stock at *PUBLIC SALE.* The offering will consist of a fine lot of Cheshire swine, pigs, boars and bred sows, and Holstein and Jersey bull calves. Catalogues ready Feb. 1. Address,

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Eggs from constitutionally strong stock for sale of the following varieties: White Leghorn, Barred Plymouth Rock, Rhode Island Red, Brown Leghorn, Silver Spangled Hamburgs, Toulouse Geese; Pekin, Rouen, Indian Runner and domesticated Wild Mallard Ducks.

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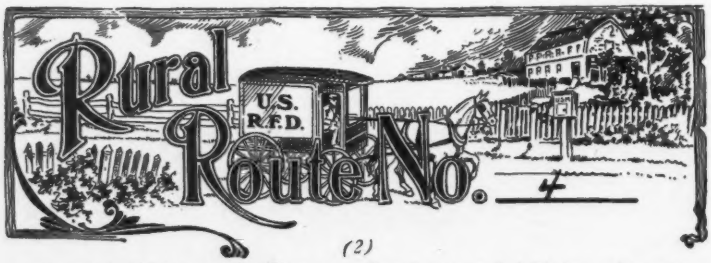

(2)

no rain in October and the wheat is small and does not look like it would stand the winter well.

We finished husking yesterday. From the acre where we tried your theory about bone-meal and clover making the Potash available, we harvested 50 bushels of rather chaffy corn, and from the rest of the field, where we used bone, clover and 50 lbs. Muriate of Potash per acre, we husked out 70 bushels per acre of tip-top corn that is nearly all fit to sell on the ear for seed corn.

I figure that a ton of Muriate of Potash on 40 acres of corn will pay for a year's post graduate study for you and leave you a little spare change to chip in for athletics.

Mother and the girls are going to make a few days' visit to Aunt Sarah's

"Plant Food" is the title of a carefully compiled, comprehensive and scientifically accurate compendium of crop feeding, fertilizer mixing and conservation of soil fertility. Sent without charge upon application.

GERMAN KALI WORKS, Inc.

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Only thorough work with the best machinery will accomplish the best paying results from spraying.

You *must* spray if you would have perfect fruit, and it doesn't pay to bother with a cheap outfit. It means no end of trouble and it's too risky—you have too much at stake.

Goulds Sprayers have proved their superiority by years of service. We make the sprayer best suited to your conditions. It will last for years because all working parts are made of bronze to resist the action of chemicals. "You can depend on a Goulds" to work when ever and as long as you require.

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It discusses the matter thoroughly. It gives valuable spraying formulas and tells how and when to use them.

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Embodies Four Separator Requisites to a Degree Unequaled by any other Cream Separator

Close Skimming: The U. S. holds the World's skimming record — an ironclad fact.

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The United States Cream Separator for 1912 is sold at the lowest price at which an ***efficient Separator*** can be sold — and this is the only basis of true economy.

Send for Catalog — or get quickest action by asking us for name of local agent nearest you, who will demonstrate right on your own dairy floor. Do it today!

Vermont Farm Machine Co.
Bellows Falls, Vermont

U.S.

DE LAVAL Cream and Butter Triumph as Usual At National Dairy Show

Cream and butter produced through the use of DE LAVAL CREAM SEPARATORS made the usual clean sweep of all Highest Awards at the great National Dairy Show (including the annual convention of the National Buttermakers Association) held in Chicago October 26th–November 4th, just as has always been the case since the organization of the Association in 1892.

WHOLE MILK CREAMERY BUTTER

The sweepstakes or highest award in this class was won by A. J. Anderssn, Otisco, Minn., with a score of 97.50.

The second highest exhibit, winning the silver service set prize, was made by J. L. Wahlstrom, Stark, Minn., with a score of 96.83.

FARM SEPARATOR BUTTER

The sweepstakes in the gathered cream factory-made butter class was won by R. O. Brye, of the Readstown Creamery Co., Readstown, Wis., with a score of 97.33, this prize-winning butter being made from the cream of farm patrons using De Laval separators exclusively.

The highest scoring dairy or home-made butter exhibit was that of Mrs. Frank Grant, Tonica, Ill., who also recently won first prize at the Illinois State Fair at Springfield.

PRIZE CREAM EXHIBITS

The highest award for certified cream was made to Nichols Bros., Bloomfield, Ky., with a score of 98.80.

The highest award for market cream was made to O. J. Bailey, Tacoma, Ohio, with a score of 96.

ALL DE LAVAL SEPARATOR MADE

Each and every one of these highest scoring butter and cream exhibits was the product of a DE LAVAL CREAM SEPARATOR, and this wonderful prize-winning record, year after year, for twenty years, is overwhelming and unanswerable proof of DE LAVAL "ALPHA-DISC" superiority to any gravity creaming system or other centrifugal separator.

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